ACCESSION NR: AP4028434 S/0181/64/006/004/1032/1088

AUTHORS: Shvidkovskiy, Ye. G.; Predvoditelev, A. A.; Zakharova, M. V.

TITLE: Conditions for growing cadmium whiskers by vapor condensation

SOURCE: Fizika tverdogo tela, v. 6, no. 4, 1964, 1032-1088

TOPIC TAGS: whisker, acicular crystal, crystal growth, crystal synthesis, artificial crystal, cadmium, vapor condensation, argon atmosphere

ABSTRACT: This paper contains experimental results regarding the effect of argon pressure on the growth of cadmium whiskers. A method is proposed for computing the vapor oversaturation in the growing tube at which whisker formation begins. The method of crystal growing employed is described in various places in the literature (G. W. Sears. Acta Met., 3, 367, 1955; E. M. Nadgorny*yi. On growing the crystals, the author noted a characteristic distribution of condensate along the growing tube. At first, condensation took place at the crystallization temperature of cadmium (320C) at all pressures. Exceptions were observed when the growing tube was not filled with argon (residual pressure, 10^{-6} mm Hg). The interval of growth at all vapor pressures from 10 to 600 mm Hg covered about 20-25C and lay at

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ACCESSION NR: AP4028434

295-320C, but a change in argon pressure caused a change not only in the form of the whisker but also in the time of growth. At low pressures the numbers and sizes of crystals were much greater. Results show that a constant Cd vapor oversaturation produces acicular crystals at any inert-gas pressure; the pressure merely modifies the rate of crystal growth, increasing or decreasing the diffusion rate of cadmium atoms to the growing crystal. Computations show that the whisker crystals begin to grow at a vapor oversaturation of 0.17, which is a lower value than the 0.4 recorded by P. B. Price (Phil. Mag., 5, 473, 1960). Orig. art. has: 5 figures, 1 table, and 7 formulas.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

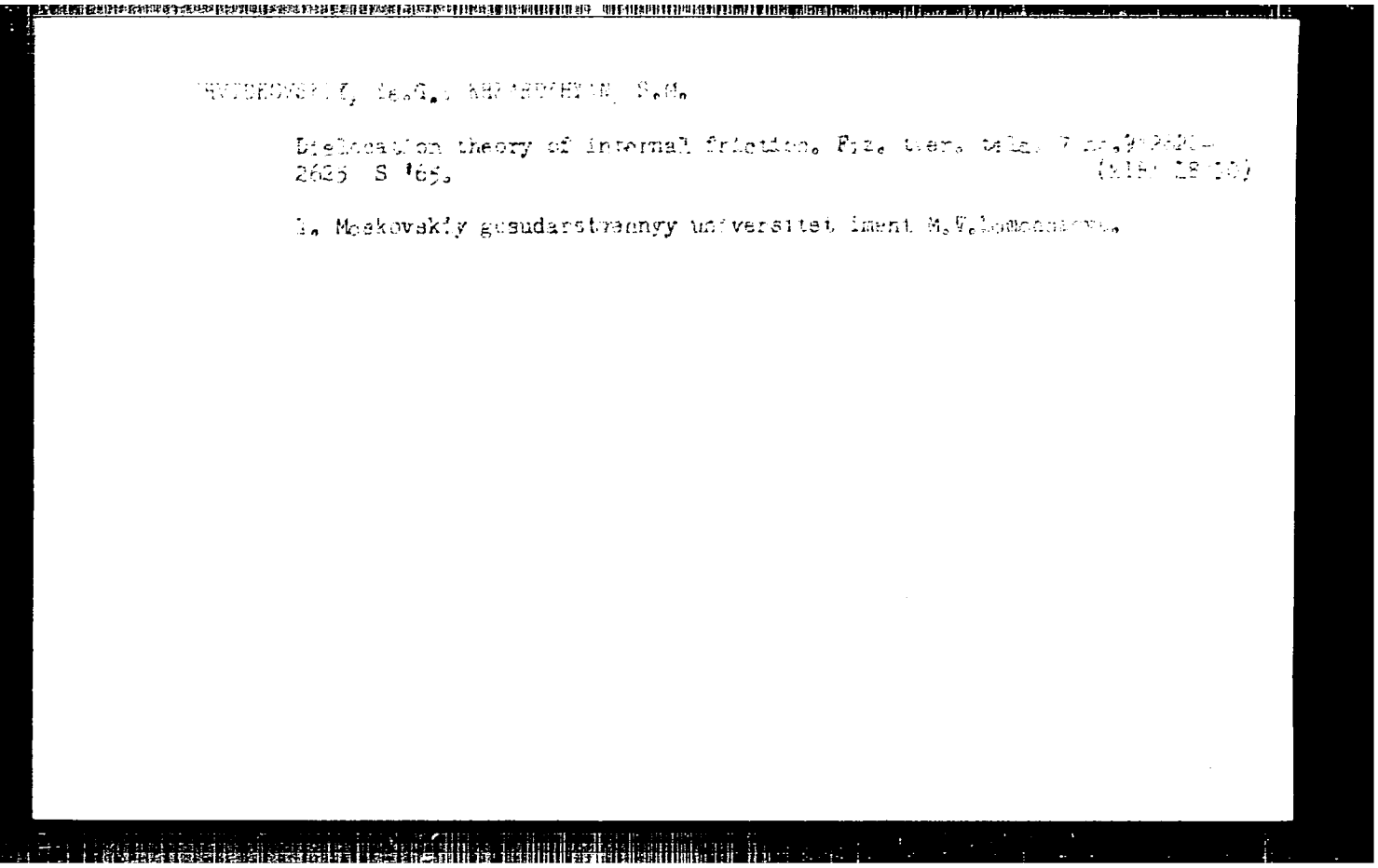
SUBMITTED: 17Oct63 DATE ACQ: 27Apr64 ENCL: 00

SUB CODE: PH NO REF SOV: 004 OTHER: 009

Card 2/2

[redacted]

International conference on [illegible] problems of the atmosphere and mesosphere. Meteor. i gidrol. no.9:39-42 S '65.
(MIRA 18:8)



[illegible], L. G., and [illegible] S. M.

Dislocation theory of internal friction. Fiz. tver. tela. [illegible]
2625 S '65. (MIRA 18:10)

1. Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova.

ACC NR: AP7008084 SOURCE CODE: UR/0293/67/005/001/0097/0100

AUTHOR: Bragin, Yu. A.; Kostko, O. K.; Repnev, A. I.; Shvidkovskiy, Ye. G.

ORG: none

TITLE: The effect of corpuscular streams and electrons photodetachment reactions on the formation of the ionospheric D layer

SOURCE: Kosmicheskiye issledovaniye, v. 5, no. 1, 1967, 97-100

TOPIC TAGS: ionosphere, ionospheric electron density, radiation belt

ABSTRACT: Data from direct measurements, indicating the presence of a relatively high and constant charged-particle concentration at altitudes of 60—80 km, were used to calculate daily electron concentrations in the D layer of the ionosphere. The calculations, which were made on the assumption that positive ions concentrations are the same day and night, and that the atmosphere is electrically neutral show that the observed charged-particle content of the ionosphere is higher during daytime than at night. This increase in daytime electric concentration in the lower ionosphere is attributed to the effect of photodetachment of electrons from negative ions. It is also postulated that charged particles originating from the Earth's radiation belts are the chief ionizing agents by which a high degree of ionization at altitudes of 60—80 km is sustained. Orig. art. has: 2 figures and 6 formulas. [JR]

SUB CODE: 04/ SUBM DATE: 26Apr66/ ORIG REF: 011 / OTH REF: 012

Card 1/1 UDC: 550.388.2

L 00704-66 EWA(c)/EWT(1)/EWT(m)/ /EWP(b)/T/EWP(w)/EWP(t) IJP(c) JD

ACCESSION NR: AP5022696 UR/0181/65/007/009/2620/2625

AUTHOR: Shvidkovskiy, Ye. G.; Khzardzhyan, S. M. 44,55 44,55

TITLE: Dislocation theory of internal friction 44,55

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2620-2625

TOPIC TAGS: crystal dislocation, internal friction, crystal deformation, elasticity theory

ABSTRACT: Hooke's laws of elasticity and Newton's laws of internal friction give some limiting approximations for the properties of physical bodies. In an actual crystal, "elastic" deformation 44,55,21 is accompanied by internal friction. The authors study the relationship between internal friction and dislocations as a form of defect in the crystal structure. With the application of an external stress field, the dislocations are deflected from their equilibrium position, which causes some additional deformation in addition to that which would appear if this same field were applied in the absence of dislocations, i. e. the deformation in an ideal crystal lattice. As long as the external stress field is changing slowly, deformation of an ideal crystal lattice and deformation due to deflection of dislocations coin-

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L 00704-66

ACCESSION NR: AP5022696

3

cide in phase with the stress and conform to Hooke's law. However, if the external field changes rapidly, dislocation deformation does not coincide in phase with the stress, and this causes dispersion. The dislocation theory proposed by the authors for dispersion of elastic constants sets more precise limits of applicability for the theory of internal friction proposed by Granato, Keller and Lücke (*J. Appl. Phys.*, 27, 583, 1956), and can be used to analyze some acoustic phenomena associated with dislocations. A relationship is found between dispersion and absorption of an acoustic wave. The contribution of dislocations to absorption is evaluated by introducing the concept of the force of dislocation oscillators. Orig. art. has: 44 formulas.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University) 44,55

SUBMITTED: 26Feb65 ENCL: 00 SUB CODE: SS

NO REF SOV: 002 OTHER: 001

Card 2/2

[illegible] kand. sel'skokhoz. nauk; SHVIDKOY, V., inzh.; KUCHEVOY, [illegible] inzh.

Pine geometrid control. Zashch. rast. ot vred. i bol. 10 no.7:26 '65. (MIRA 18:10)

1. Ukrainskiy institut lesnogo khozyaystva i agrolesomelioratsii, Khar'kov.

USSR/Geology - Petroleum FD-2741

Card 1/1 Pub 41 - 2/16

Author : Shvidler, M. I., Ufa

Title : Interference of oil wells in a pressure system of petroleum filtration

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 5, 42-49, May 1955

Abstract : Describes the method of determining the output of oil wells placed in an in-line and also in a radial position with respect to each other, and compares the merits of both systems. Points out the importance of principles involved in order to achieve maximum output per well, and to avoid the danger of pumping up gas in a deep well operation, where the petroleum reaches the well in a steady rate of filtration through a porous stratum. Concludes that output of wells radially positioned is greater than that of in-line wells. Drawings, formulae, graphs and statistical data. Six references, 5 USSR.

Institution : Ufa Petroleum Scientific Research Institute

Submitted : 9 April, 1955

SHVIDLER, M.I. (Ufa)

Fluid flow to oil wells having fissures near the pool.
Izv.AN SSSR Otd.tekh.nauk no.11:95-100 N '55.
(MLRA 9:2)

1.Ufimskiy neftyanoy nauchno-issledovatel'skiy institut.
(Petroleum engineering)

124-58-6-6903 D

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 6, p 92 (USSR)

AUTHOR: Shvidler M.I.

TITLE: The Interference Between Wells in an "Elastic" Flow Regime of Oil in a Reservoir (Hydrodynamic Calculation Methods for Given Pressures) [Interferentsiya skvazhin pri uprugom rezhime fil'tratsii nefti (Metody gidrodinamicheskikh raschetov pri zadannykh davleniyakh)]

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to Vses. neft. n.-i. in-t, Ufimsk. neft. n.-i. in-t (All-Union Scientific Petroleum Research Institute, Ufa Scientific Petroleum Research Institute), Ufa, 1957.

ASSOCIATION: Vses. neft. n.-i. in-t, Ufimsk. neft. n.-i. in-t (All-Union Scientific Petroleum Research Institute, Ufa Scientific Petroleum Research Institute), Ufa.

1. Petroleum--Reactions 2. Wells--Interference 3. Hydrodynamics research

Card 1/1

SHVIDLER, M.I.

Concerning a space problem on the theory of flow. Trudy UFNII no.2:155-162 '57. (MIRA 12:1)
(Hydraulics)

SHVIDLER, M.I.

Effective method for excluding water from wells by means of hydraulic fracturing. Trudy UFNII no.2:163-167 '57.
(MIRA 12:1)

(Oil wells--Hydraulic fracturing)

SOV/124-58-10-11331

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 91 (USSR)

AUTHOR: Shvidler, M.I.

TITLE: Interference Between Wells Under Prevailing Elastic Seepage Conditions (Interferentsiya skvazhin pri uprugom rezhime fil'tratsii)

PERIODICAL: Tr. Ufimsk. neft. n.-i. in-t, 1957, Nr 2, pp 168-177

ABSTRACT: The results of an earlier investigation (Izv. AN SSSR. Otd. tekhn. n., 1955, Nr 5. pp 42-42; RZhMekh, 1956, Nr 5, Abstract 3000) of a problem dealing with the flow of fluid toward a chain, or a circular battery of wells operating under conditions of elastic seepage are extended to include the case of an arbitrary number of well chains or batteries. In the area which contains all the well chains (batteries), the factor of elasticity of the fluid and the rock is neglected; however, outside that area, elastic seepage conditions are preserved. The problem reduces to the solution of a system of equations [Charnyy, I.A., Podzemnaya gidromekhanika (Subterranean Hydromechanics), Gostekhizdat, 1948, p 36]. The pressure, which is constant along the boundary interface, is a function of time and may be determined by combining the solutions obtained for the elastic and nonelastic zones. Numerical examples are given.

Card 1/1

V.N. Nikolayevskiy

SOV/124-58-11-12911

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 150 (USSR)

AUTHOR: Shvidler, M. I.

TITLE: The Effectiveness of the Isolation of Bottom Water by Means of Hydraulic Fracturing (Effektivnost' izolyatsii podoshvennykh vod pri pomoshchi gidrorazryva)

PERIODICAL: Tr. Ufimsk. neft. n.-i. in-t, 1958, Nr 2, pp 163-167

ABSTRACT: The velocity of motion of a particle of bottom water in a circular horizontal fissure is determined under the following assumptions: The viscosities and densities of the petroleum and the water are the same, the inflow toward the well can be disregarded, and the potential distribution is the same as for a flattened ellipsoid of revolution in an infinite halfspace. From a comparison with the results for shallow wells, obtained under analogous premises (Salekhov, G. S., Danilov, V. L., Ivanov, N. F., Khovanskiy, A. N., Izv. Kazansk. fil. AN SSSR, Ser. fiz.-mat. i tekhn. n., 1954, Nr 5), it becomes apparent that a horizontal fissure is flooded somewhat more slowly.

V. N. Nikolayevskiy

Card 1/1

SOV/24-58-7-8/36

AUTHORS: Lebedev, S. A., [illegible]senko, V. F., Shvidler, M. I. (Ufa)

TITLE: On Filtering a Flow in Transition from a Single Phase into a 2-Phase State (O fil'tratsii potoka, perekhodyashchego iz odnofaznogo sostoyaniya v dvukhfaznoye)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 7, pp 56-60 (USSR)

ABSTRACT: The question of the parameters of a flow of the vapourising liquid affected by the permeability of the saturated porous space was investigated by the authors. The following problems they describe in detail. A harmonic function p (pressure) confined in the space G (Fig 1) with higher pressure than the saturated one, has a finite number of logarithmic properties with its value becoming p_r at the boundary Γ. At the boundary of the vapourising layer, the position of which in the space G is not known, the function $p = p'$ (saturated pressure). The operational pressure is applied to the wells situated in G. The profile γ_i represents a boundary of a vapourising zone g_i, which contains a harmonic function H_i, top of p 57 (S. A. [illegible]istianovich function, Ref 1), where K - specific phase permeability for liquids.

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On Filtering a Flow in Transition from a Single Phase into a 2-Phase State

In the space g_i the function H_i has a finite number of logarithmic properties conforming to the conditions $H_i' = H'$ at the zone boundary, $H_i = H_{oi}$ for wells inside the zone, $H' = H(p') = \text{const} \neq p'$ (O denotes the well). The rate of filtration of the liquid at the boundary γ_i is:

$$\frac{\partial H_i}{\partial n} = \frac{\partial p}{\partial n}$$

(n - normal to γ_i). The function H_i continuously increases the flow of liquid defined by the function p in g_i (Eqs 1.1 and 1.2). If the function $p'' = p$ in G and $p'' = H_i$ in g_i, then p'' becomes a harmonic function in F, i.e. in all the layers. For the wells situated in G, the function

On Filtering a Flow in Transition from a Single Phase into a 2-Phase State

$p^* = p = p_o$ (Eq 1.3). The pressure p^* for the wells in g_i is:

$$p^* = H_{oi} - (H' - p') \quad , \qquad (1.4)$$

Thus the production of the mixed flow can be determined from a fictitious flow of a uniform and non-compressed liquid and the calculation performed with an application of the usual interconnection formula (Ref 7). Thus the functions p_1^* and p_2^* (Eq 1.5) in the space F are found when the pressures are taken as $p_1^* = p_o$, $p_2^* = 0$ for the wells in G , while $p_1^* = p'$, $p_2^* = H_{oi} - H'$ for these in g_i and $p_1^* = p_\Gamma$, $p_2^* = 0$ at the boundary Γ . If the harmonic function $p''_2 = p_2^* + H'$, the function $p''_2 = H$ for the wells in G , $p''_2 = H_{oi}$ for these in G_i and $p''_2 = H'$ at the profile Γ .

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On Filtering a Flow in Transition from a Single Phase into a 2-Phase State

Therefore, the flow defined by the functions p_1^* and p^{**}_2 has a production equal to that of all the wells. The value $H = H(p)$ is determined from Eqs (2.1) to (2.5). (Figs 2 and 3 show the indicating curves for $Q = Q(p_o)$ and $p_o = p_o(Q)$; pr p' respectively). As an example the following data are given: γ = 28.8 m^3/m^3 ; μ_g = 0.02 cps, μ_o = = 2.35 cps, β_o = 0.246, $\alpha = s\mu_g/\mu_o = \alpha$ = 0.00256 for $s = 0.301 \frac{m^3}{m^3 atm}$ (s - coefficient of gas solubility). The relationship of ΔH^* and Δp^* for the well Nr 840 is given in

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On Filtering a Flow in Transition from a Single Phase into a 2-Phase State

Fig 4 with the lower curve from Ref 6. Fig 5 illustrates an interconnection of a system of two chains of wells. The calculation of the interconnection of wells is carried out with the following data: $H_1 = 250$ m, $H_2 = 750$ m, $L = 1750$ m, $2\sigma_1 = 2\sigma_2 = 400$ m, $x_2 = 0$, $x_1 = 200$ m, $p_k = 170$ atm, $p_{o1} = 80$ atm, $p_{o2} = 70$ atm, $p' = 96$ atm, $k = 0.5$ darcy, $\mu = 2.35$ cps, $r_{o1} = r_{o2} = 0.1$ m, $h = 10$ m. The values of $H' - H_{o1} = 13.4$ atm and $H' = H_{o2} = 18.0$ atm are based on Fig 2. The production of the wells is obtained as $q_1 = 100.7$ m^3 per day, $q_2 = 391.0$ m^3 per day, for which the radii are $r_1 = 5.35$ m, $r_2 = 4.47$ m respectively. An analogical calculation based on the tables produced by K. A. Tsarevich gave: $p_{o1} = 80$ atm, $p_{o2} = 70$ atm, $q_1 = 119.7$ m^3 per day, $q_2 = 448.4$ m^3 per day. A vapourising zone consisted of one area, the dimensions of which are shown in Fig 6. In the case where the interference

SOV/24-58-7-8/36

On Filtering a Flow in Transition from a Single Phase into a 2-Phase State

of the wells is affected by water pressure, the formula (3.1) (Ref 8) should be applied. There are 6 figures and 8 references, all of which are Soviet.

ASSOCIATION: Ufimskiy neftyancy naucho-issledovatel'skiy institut (Ufa Oil Research Institute)

SUBMITTED: April 26, 1957.

Card 6/6

SOV/179-59-2-38/40

AUTHOR: Shvidler, M. I. (Ufa)

TITLE: On the Advancement of the Division Line in Transition from the Single-Phase into the Two-Phase Filtering Flow (O prodvizhenii granitsy razdela pri perekhode odnofaznogo fil'tratsionnogo potoka v dvukhfaznyy)

PERIODICAL: Izvestiya Akademii nauk SSSR OTN, Mekhanika i mashinostroyeniye, 1959, Nr 2, pp 203-204 (USSR)

ABSTRACT: The division line of the transition of the flow of an elastic liquid into the liquid-gas flow is described. The variation of pressure at a certain moment $t = 0$ is $p_0 < p^0 < p'$ (p' - pressure of elastic liquid, p^0 - saturation pressure). The division line is defined by the coordinate $x = \xi(t) \geqslant 0$, which divides the flow into the region 1 where $p_1 \leqslant p^0$ and $x \leqslant \xi(t)$ and the region 2 where $p_2 \geqslant p^0$ and $x \geqslant \xi(t)$. The pressure in the region 2 can be expressed as Eq (1) for the conditions Eq (2) where a_2^2 - piezo-conductivity. The pressure p_1 in the region 1, i.e. when $x < \xi$, can be expressed as Eq (3) (Ref 1), where

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On the Advancement of the Division Line in Transition from the Single-Phase into the Two-Phase Filtering Flow

σ - gas saturation of porous medium (unknown), $f_i(p_1, \sigma)$ $(i = 1,...4)$ - known function (Ref 1). Then the conditions at the boundary of the region 1 can be described as Eqs (4) and (5), where $k(\sigma)$ - phase permeability, μ - viscosity, m - porosity, k - permeability in region 2. If η is defined as Eq (6) then the conditions (7) and (8) will apply to region 2, from which ξ (Eq 9) and $\eta^* = \alpha$ are found. Similarly, the expressions (10) and (11) are applied to the region 1 and the formula (5) will take the form Eq (12). The solution can be calculated in the following order: 1) the expression $p_2 = p_2(\varphi, \alpha)$ is found from Eq (7) for the conditions Eq (8); 2) the expression $p_1 = p_1(\varphi, \alpha)$, $\sigma = \sigma(\varphi, \alpha)$ is found from Eq (10) for the conditions (11);

On the Advancement of the Division Line in Transition from the Single-Phase into the Two-Phase Filtering Flow

(3) the results thus obtained are substituted into Eq (12), which in this case represents the function $\varphi(\alpha) = 0$. The values of α, p_1, p_2 and σ are calculated from this function. Thanks are given to G. I. Barenblatt for his assistance. There is 1 English references.

ASSOCIATION: Ufimskiy neftyanoy nauchno-issledovatel'skiy institut (Ufa Oil Scientific Research Institute)

SUBMITTED: June 12, 1958.

Card 3/3

1?(4) SOV/179-59-4-21/40

AUTHOR: Shvidler, M. I. (Ufa)

TITLE: Method of Approximation for Computing the Influx to the Boreholes and Needle Filters in the Case of Feeding From Above or From Below

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, 1959, Nr 4, pp 141 - 143 (USSR)

ABSTRACT: This investigation concerns the stationary liquid influx to the borehole which drains a cylindric earth layer lying upon an impervious layer. It is assumed that the lateral surface of this layer is impermeable to liquids. A constant pressure is given on a horizontal plane lying above the filter of the borehole. Also the amount of pressure on the surface of the borehole filter is assumed to be known. This problem was investigated by means of the method of superposition of sources and discharges by M. Muskat (Refs 1,2). The relations obtained by this author are too complicated for computations, and the diagrams shown in these papers (Refs 1,2) do not comprise a number of cases which are of interest to practice. An approximate solution is given here. A comparison with the computations by Muskat reveals that the

Card 1/2

Method of Approximation for Computing the Influx to the SOV/179-59-4-21/40
Boreholes and Needle Filters in the Case of Feeding From Above or From Below

approximate solution is sufficient in practice. There are
3 figures and 2 references, 1 of which is Soviet.

SUBMITTED: December 1, 1958

Card 2/2

SHVIDLER, M.I.

Theoretical study of flows changing from a single-phase to a two-phase state. Trudy VNII no.25:56-72 '59. (MIRA 15:4)

1. Ufimskiy neftyanoy nauchno-issledovatel'skiy institut.
(Oil reservoir engineering)

SHVIDLER, M. I. (Ufa)

"On a Three-Dimensional Problem in the Theory of Seepage."
"On a Problem in the Theory of Nonlinear Seepage."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

S/179/60/000/01/007/034
E191/E581

AUTHOR: Shvidler, M.I. (Ufa)

TITLE: On a Certain Base Problem in the Theory of Filtration

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, Nr 1, pp 47-53 (USSR)

ABSTRACT: The problem of a steady state inflow of liquid to a bore hole with imperfectly developed degree of opening is considered. This signifies the presence of different regions at the bore hole boundary with different values of the potential function. The entire space of the flow is sub-divided into two sub-spaces and the solutions are found for each separately. These two solutions are then fitted along the mutual boundary of the two spaces. The yield of the bore hole is computed. The present analysis is capable of application to several problems arising with imperfect bore holes. The same author's earlier solution to the problem of the inflow of a liquid to a bore hole when a crack is present in the vicinity can also be derived

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S/179/60/000/01/007/034
E191/E581

On a Certain Base Problem in the Theory of Filtration

by the present method.
There are 3 figures and 7 Soviet references.

SUBMITTED: July 17, 1959

Card 2/2

SHVIDLER, M.I. (Ufa)

Plan for determining capillary pressure under dynamic conditions. PMTF no.4:64 N-D '60. (MIRA 14:7)
(Capillarity)
(Hydrodynamics)

SHVIDLER, M.I.; RAKHIMKULOV, I.F.

Determining parameters of the oil bed from isobar charts. Trudy VNII no.29:254-257 '60. (MIRA 13:10)

1. Ufimskiy neftyanoy nauchno-issledovatel'skiy institut.
(Oil reservoir engineering)

SHVIDLER, M.I. (Ufa)

Interpenetrating flow of immiscible fluids in a po.ous medium. Izv. AN SSSR. Otd. tekh.nauk Mekh. i mashinostr. no. 1:131-134 Ja-F '61. (MIRA 14:2)

(Oil field flooding)

SHVIDLER, M.I.; RAKHIMKULOV, I.F.; PORTNOV, V.I.

Determination of the parameters of a layer from pressure build-up curves. Neft.khoz. 39 no.8:49-56 Ag '61. (MIRA 14:7)
(Oil reservoir engineering)

RAKHIMKULOV, I.F. (Ufa); SHVIDLER, M.I. (Ufa)

Self-modeling problem of simultaneous flow of oil and water. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.2:136-137 Mr-Ap '62. (MIRA 15:5)

(Oil field flooding)

STARTSEVA, T.V. (Ufa); SHVIDLER, M.I. (Ufa)

Numerical solution of problems in plane filtration flow in media with random nonhomogeneities. Izv. AN SSSR Otd. tekh. nauk. Mekh. i mashinostr. no.2:33-37 Mr-Ap '63. (MIRA 16:6)

(Fluid dynamics)

SHVIDLER, M. I. (Ufa)

Average characteristics of filtration flows in media with random nonhomogeneities. Izv. AN SSSR. Mekh. i mashinostr. no.4:127-129 Jl-Ag '63. (MIRA 17:6)

MENDEL'SON, M.M. (Ufa); SHVIDLER, M.I. (Ufa)

Accuracy of the prediction of the yield of a well. Izv.AN SSSR. Mekh. i mashinostr. no.5:148-150 S-O '63. (MIRA 16:12)

S/0124/64/000/001/B124/B124

ACCESSION NR: AR4014421

SOURCE: RZh. Mekhanika, Abs. 1B793

AUTHOR: Shvidler, M. I.

TITLE: Hydrodynamic calculation of filtration processes in nonhomogeneous stratified systems

CITED SOURCE: Tr. Ufimsk. neft. n.-i. in-t, vyp. 9-10, 1963, 110-121

TOPIC TAGS: filtration, stratified system

TRANSLATION: The plane stationary filtration of an incompressible fluid has been studied for the case when the permeability of the porous medium is a random function of the coordinates. The random function realization is in the form of a permeability representation using the extrainterpolation method with a given distribution system of the pore points. In practice, the investigator has at his disposal only a single realization requiring additional assumptions about the uniformity and ergodicity of the random function.

The author presents a method for the evaluation of the mathematical expectation and of the correlation function and shows that it is convenient to approximate the

Card 1/2

SHVIDDER, M. I. (Ufa)

"Hydrodynamic calculations of filtration flows in media with random inhomogeneities"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

L 29365-66 EWT(1)/EWP(m) WW

ACC NR: AP6013210 SOURCE CODE: UR/0421/66/000/002/0124/0126

AUTHOR: Shvidler, M. I. (Ufa)

ORG: none

TITLE: One dimensional filter flows in media with random non-uniformities

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 2, 1966, 124-126

TOPIC TAGS: filtration, fluid flow

ABSTRACT: The article considers steady state linear flow between two galleries (1) and (2) located at the ends of the interval $0 \leq x \leq l$, in the case when the pressure in gallery (1) is given and the flow rate is q. There must be sought the solution of equation

$$\frac{d}{dx}\left[k(x)\frac{dp(x)}{dx}\right]=0 \qquad (1.1)$$

under the condition $p(0) = p_1$ (1.2)

It is evident that the flow rate

$$q = k(x)\frac{dp(x)}{dx} \qquad (1.3)$$

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L 29865-66

ACC NR: AP6013210 O

will be the first integral of Equation (1.1). Consequently, integrating Equation (1.3) under the condition (1.2) we get

$$p(x) - p_1 = q \int_0^x \frac{dx}{k(x)} \qquad (1.4)$$

Final results of the calculations are exhibited in graphic and tabular form. Orig. art. has: 18 formulas, 3 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 28Aug65/ ORIG REF: 001

Card 2/2 FV

ZASTENKER, G.N.; SOLNTSEV, G.S.; SHVIKLIN, B.N.

Mechanism of the formation of a high-frequency low-pressure discharge in air. Radiotekh. i elektron. 6 no.3:387-394 Mr '61. (MIRA 14:3)

(Electric discharges)

1. SHVYRKOVSKAYA, V. N.

2. USSR (600)

4. Blood - Examination

7. Significance of determination of iron in blood plasma in some internal diseases. Klin. med. 30, no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

[illegible] starshiy nauchnyy sotrudnik

[illegible]ring and assembly tools. Tekh. est. no.3:26-29 Mr '65.
(MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tekhnicheskoy estetiki.

SMV[illegible], V.

...e problems in the making up of assortments. Tekh. est. no.4:2 ...p '65. (MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tekhnicheskoy estetiki.

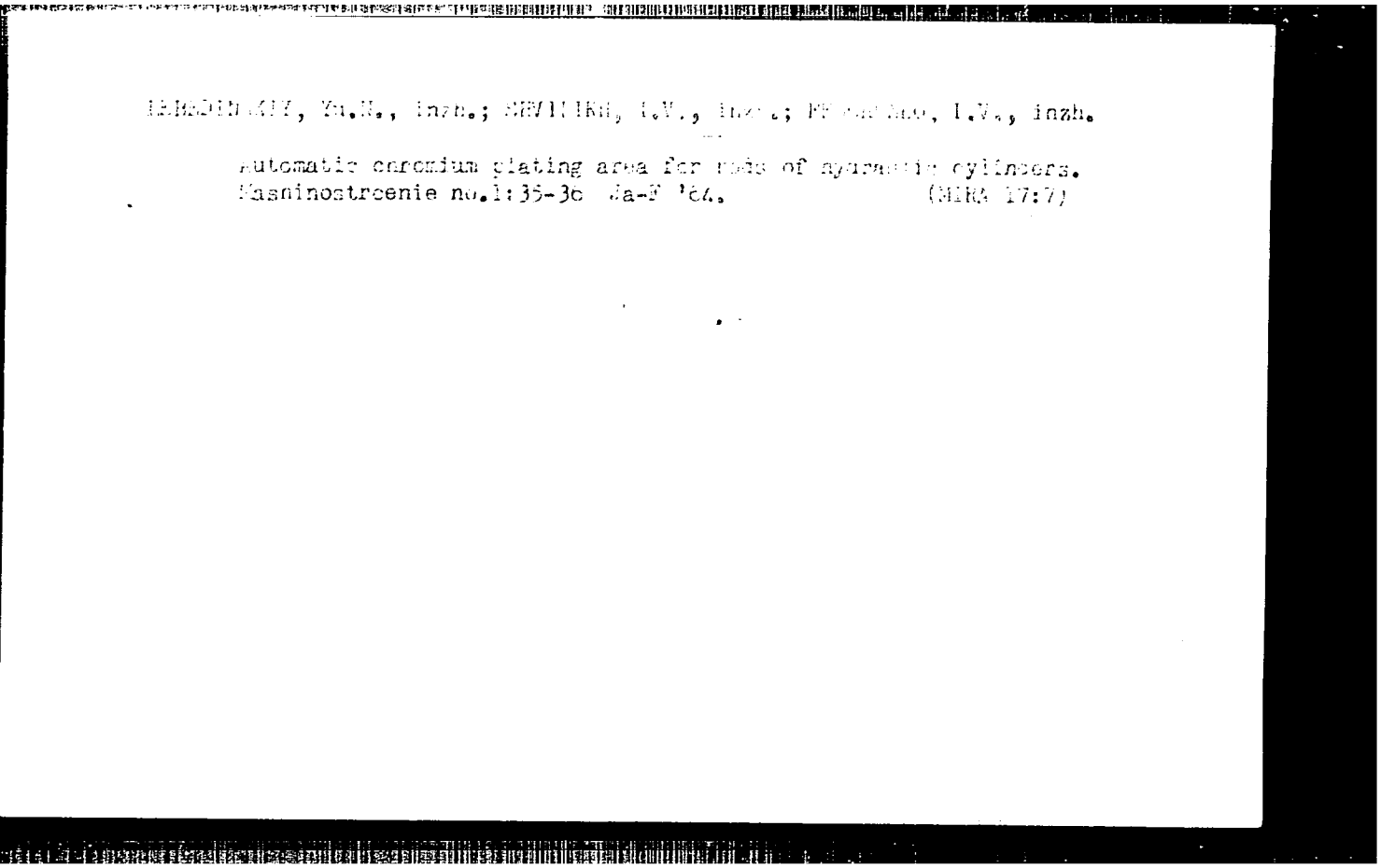
SHVILI, V.V., nauchnyy sotrudnik

Laundries in apartment houses. Gor.khoz.Mosk. 36 no.12:28-30 D '62. (MIRA 16:2)

1. Institut ekonomiki AN SSSR.
(Moscow--Laundries)

SHVILI, Vitaliy Vladimirovich; TOLYFINA, O.N., red.

[Art and production; a social and economic essay on the alliance between labor and beauty] Iskusstvo i proizvodstvo; sotsial'no-ekonomicheskii ocherk o soiuze truda i krasoty. Moskva, Ekonomika, 1964. 86 p. (MIRA 17:12)



[illegible], Yu.N., inzh.; [illegible], I.V., inzh.; [illegible], I.V., inzh.

Automatic chromium plating area for rods of hydraulic cylinders. Vestnik mashinostroeniia no.1:35-36 Ja-F '64. (MIRA 17:7)

DOVGICH, N.; SHVILIKH, V.

Antibiotics preserve precooked meat products. Sov. torg. 34 no.10: 32-33 O '60. (MIRA 13:10)

1. Sotrudnik Ukrainskogo nauchno-issledovatel'skogo instituta torgovli, Kiyev.
(Kiev--Meat industry) (Food conservation)

BERGER, Iosif Moekhovich; SHVILIKH, Vasiliy TSezorovich; BEL'KOVICH, A.V., red.; MAMONTOVA, N.N., tekhn. red.

[Grocery trade] Torgovlia prodovol'stvennymi tovarami. Moskva, Gos. izd-vo torg. lit-ry, 1962. 126 p. (MIRA 15:3)
(Grocery trade)

9.3150 (1049, 1140, 1532)
26.2340

21590
S/109/60/005/010/019/031
E033/E415

AUTHORS: Zastenker, G.N., Solntsev, G.S. and Shvilkin, B.N.

TITLE: Processes in a High-Frequency Discharge of Low-Pressure With Change of Electrode Voltage

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.10, pp.1709-1716

TEXT: A possible mechanism of a high-frequency discharge of low-pressure is described. The explanation assumes a re-distribution of the field in the discharge gap and constant field strength in the plasma for different applied voltages. The relationships between the electron density, the discharge current and the voltage are deduced and the calculated data is compared with results obtained experimentally by investigation of the current and illumination intensity of a 12 Mc/s discharge in air (0.4 to 30 mm Hg pressure) with external electrodes. The mechanism, which sustains the constant field strength in the plasma with over-voltage, may be, in the authors' opinion, a re-distribution of the field strength in the discharge gap, such that the field strength in the central part remains equal to the breakdown value, but increases in the neighbourhood (within

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001550420001-3"

Processes in a High-Frequency ...

distance d_1) of the electrodes. The electron density is idealized: in the near-electrode regions, the electron-density is assumed negligibly small, i.e. zero, and in the central regions, it has a constant value n. It is deduced that, for pd $\gg$ 30 mm Hg · cm

$$n = \frac{m\omega\nu_{cm}\, d}{8\pi e^2 d_1}\sqrt{(1+W)^2-1}, \qquad (6)$$

where m is the mass of an electron, ω is the angular frequency of the field ν_{cm} is the frequency of collisions of electrons with neutral molecules, d is the gap length, e is the electron charge, W is the over-voltage

$$W = \frac{U_0 - E_3 d}{E_3 d}$$

U_0 is the maximum amplitude of the voltage applied to the discharge gap, and E_3 is the field strength at which breakdown occurs. In this case, attachment of electrons to the molecules of the electro-negative gas is the basic de-electronization process.

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For the case when $1 < pd < 30$ mm Hg · cm, then, in a pulsed "striking" regime, free diffusion is the basic de-electronization process and

$$n = \frac{m\omega\nu_{cm}d}{8\pi e^2 d_1}\sqrt{(1+W)^2\frac{E_э^2}{E_{э\,мин}^2}-1}. \qquad (6a)$$

where $E_{э\,мин}$ ($E_{э\,min}$) is the breakdown field strength for high pd values, and $E_э$ is the actual breakdown field strength. To check the relationships (6) and (6a), it was necessary to establish the connections between the electron density and the measured discharge current, and also between the current and the voltage across the gap. To conform to the method of measurement, in which a compensation circuit was used, the "inter-electrode capacity current" ($i\omega S U / 4\pi d$; S = the cross-sectional area of the discharge tube, U = the voltage applied across the gap) was excluded. Then the amplitude of the measured current depends on the electrode voltage and electron density as follows:

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$$I_0 = \frac{U_0 \omega S e^2 (d - 2d_1)\, n}{d \sqrt{(\omega m d \nu_{em})^2 + (\omega^2 m d - 8\pi d_1 e^2 n)^2}} \quad (7)$$

From (6) and (7), the discharge current is related to the overvoltage by

$$I_0 = \frac{U_3 \omega S (d - 2d_1)}{8\pi d d_1} \sqrt{(1 + W)^2 - 1}, \quad (8)$$

where U_3 is the amplitude of the breakdown voltage. A similar expression can be obtained for low pd values by using Eq.(6a) and (7). By re-arrangement of Eq.(7), the density is found by

$$n = \frac{8\pi m \omega^2 d_1 d^3 + m\omega\nu_{em} d^2 \sqrt{(U_0/I_0)^2 \omega^2 S^2 (d - 2d_1)^2 - (8\pi d d_1)^2}}{e^2 [(U_0/I_0)^2 \omega^2 S^2 (d - 2d_1)^2 - (8\pi d d_1)^2]}. \quad (9)$$

The experimental set-up was designed for studying the ionization state of the gas in the gap with different voltages across it. The integral intensity of the glow discharge was registered and the discharge current was measured. The block schematic is given and

the set-up is described. The tube diameter was 40 mm, length 21 mm, and the diameter of the external plane-parallel electrodes was 70 mm. The supply oscillator power was approximately 800 watts with a very low internal impedance. The pulsed operation permitted the discharge to be studied immediately after its formation before the heating of the gas exerted any effect. The volt-ampere characteristics of the discharge for different pressures are given. The steepest increase of current with increase of voltage corresponds to the transition from the form of discharge, where the volume processes play the basic role, to the form where electron emission from the walls is fundamental (from the α- to the γ-discharge). The following results are presented graphically and their interpretation discussed: 1) dependence of the discharge current on the over-voltage, 2) the electron density dependence on the over-voltage. Calculated results are given on the same graphs for purpose of comparison. There are 6 figures and 12 references: 5 Soviet and 7 non-Soviet.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova (Physics Faculty of Moscow State University imeni M.V.Lomonosov)

SUBMITTED: December 11, 1959

21652

S/109/61/006/003/009/018
E032/E314

24,2120 (1049, 1482, 1502)
26.2311

AUTHORS: Zastenker, G.N., Solntsev, G.S. and Shvilkin, B.N.

TITLE: On the Mechanism of Formation of a Low-pressure High-frequency Discharge in Air

PERIODICAL: Radiotekhnika i elektronika, 1961, Vol. 6, No. 3, pp. 387 - 394

TEXT: The time of formation of a high-frequency discharge in air was investigated at pressures in the range 0.4 - 30 mm Hg and frequencies 12, 6, 3.3 Mc/s. The discharge was excited in a tube with external disc electrodes (diameter of the electrodes 70 mm, distance between them 21 mm). The time of formation was measured oscillographically and the radiation emitted from the discharge gap was recorded as described in previous papers (Refs. 1, 5). Oscillograms were used to determine the time t_{exp} from the beginning of the formation of the discharge to the instant at which the increase in the current or the glow of the discharge departed from the exponential law. The total time of formation t_{form} was also determined. It was

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established experimentally that the time of formation of the low-pressure, high-frequency discharge in air lies between 5 and 200 μs. The transition from the α-discharge to the γ-discharge is accompanied by a reduction in the time of formation. Fig. 6 shows the comparison between the experimental and calculated (Gould and Roberts - Ref. 4) data for the exponential stage of the increase in the electron concentration. In this figure, the full curves are theoretical (Ref. 4) and the experimental points are as follows: 1 - pd = 63 mm Hg; 2 - pd = 6.3 mm Hg; 3 - pd = 40 mm Hg; 4 - pd = 4.2 mm Hg; 5 - pd = 21 mm Hg; 6 - pd = 2.5 mm Hg; 7 - pd = 10.7 mm Hg (E/p is in V/cm.mm Hg; pd is in mm Hg.sec). Fig. 7 illustrates the development of the discharge in time at 12 Mc/s (a - p = 3 mm Hg, W = 23.3%; б - p = 10 mm Hg, W = 16.1%; B - p = 20 mm Hg, W = 31%. W is the overvoltage. The continuous curves are theoretical, the crosses and triangles are experimental; 1 - relative increase in the discharge current; 2 - relative increase in the intensity of the glow, I). As can be seen from Fig. 6, a qualitative

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On the Mechanism of ....

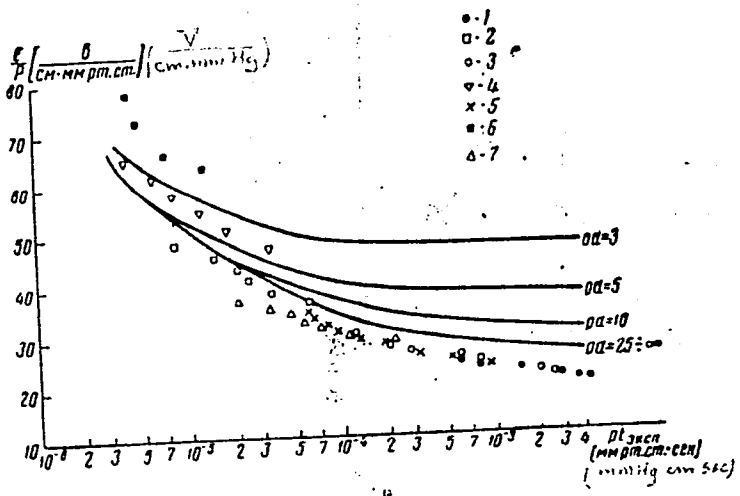
confirmation of the theory given in Ref. 4 is obtained, although exact agreement is not found. Above 5-10 mm Hg t_{exp} is independent of pd , which suggests that electron capture predominates, as compared with the diffusion to the walls. The possible reason for the discrepancy between theory and experiment may be the fact that the electron drift and the space-charge field are not taken into account in theory. In particular, the difference between the theoretical and experimental curves in Fig. 7 is said to be due to distortion of the field by the space charge. It is suggested that corrections for the space charge must be introduced into the theory. There are 7 figures and 11 references: 3 Soviet and 8 non-Soviet.

SUBMITTED: June 29, 1960

Card 3/5

On the Mechanism of ....

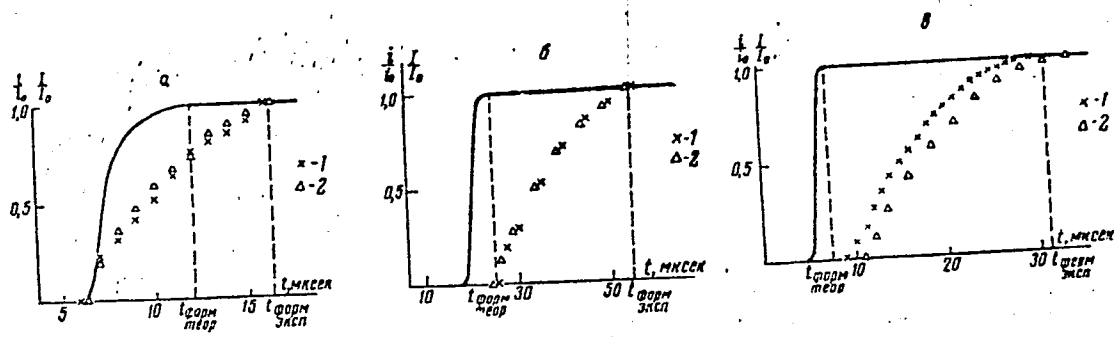
Fig. 6:



Card 4/5

On the Mechanism of ....

Fig. 7:



Card 5/5

L 22870-65 EEC(b)-2/EPA(w)-2/EWG(k)/EWT(1)/EEC(t)/EPA(sp)-2/T/EWA(m)-2 Po-4/
ACCESSION NR: AP5002315 Pi-4/Pz-6/Pab-10 IJP(c) S/0141/64/007/005/0844/0847
AT

AUTHOR: Shvilkin, B. N.; Vasil'yeva, M. Ya.; Zaytsev, A. A.

TITLE: Plasma noise of a high-frequency discharge in a magnetic field

SOURCE: IVUZ. Radiofizika, v. 7, no. 5, 1964, 844-847

TOPIC TAGS: plasma oscillation, high frequency plasma, high frequency discharge

ABSTRACT: The authors present data on noise arising in a high-frequency discharge in a magnetic field. The discharge was excited in a glass cylindrical tube with inside diameter 2.8 cm and with 72 cm between electrodes. A flat wall probe was placed in the central part of the tube. The alternating voltage with maximum values from 50 to 200 V (9.4 Mcs) was applied to external electrodes in the form of rings surrounding the discharge tube. A solenoid 60 cm long made it possible to produce a homogeneous magnetic field up to 2.5 kG. The tube was filled with pure helium and argon at pressures 0.01 to 0.2 mm Hg. A leak valve was used to maintain the gas pressure constant in the experimental tube. The noise was registered with a high-frequency selector microvoltmeter and a panoramic spectrum analyzer. The measured voltage was picked off the flat probe or a copper ring

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L 22870-65
ACCESSION NR: AP5002315

surrounding the tube. The experiments have shown that when the magnetic field rises above a critical value, noise sets in abruptly, with a spectrum ranging from several dozen kilocycles to several megacycles. The noise spectrum has a peak at low frequencies, with a width of several tenths of a megacycle. The maximum noise amplitude decreases with increasing pressure. At the critical magnetic field, the noise amplitude at a pressure on the order of 10^{-2} mm Hg in helium reached several hundredths of a volt. The critical field increases with increasing gas pressure. As the high frequency voltage decreases, the critical field remains practically constant down to approximately 400 V for helium and 300 V for argon. Further decrease in voltage causes a sudden increase in the critical magnetic field. The results are interpreted from the point of view of the theory of ion-sound and dissipative instability of an inhomogeneous magnetic plasma. With increasing magnetic field, the role of the ion-sound oscillation decreases. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: 27Jan64 ENCL: 00 SUB CODE: ME

NR REF SOV: 005 OTHER: 003

Card 2/2

SRVTKIN, B.N.; VASIL'EVA, M.Ya.; [illegible]

Plasma noise of a high-frequency [illegible]
Izv. vys. ucheb. zav.; radiofiz. [illegible]

1. Moskovskiy gosudarstvennyy universitet.

[illegible], [illegible] SHV[illegible]KIN, [illegible]

[illegible] in the phenomena of helical unsteadiness of a positive column in a magnetic field. Radiotekh. i elektron. 10 no.5:951-952 My '65. (MIRA 18:5)

L 59510-65 EWT(l)/EWT(m)/EPF(c)/EPF(n)-2/EWG(m)/EPA(w)-2/EWP(t)/EWP(b) Pz-6/
Po-4/Fr-4/Pi-4 IJP(c) JD/WW/AT

ACCESSION NR: AP5016629 UR/0188/65/000/003/0081/0082
533.951:537.525

AUTHORS: Shvilkin, B. N.; Glotova, N.N.

TITLE: Low pressure discharge noise

SOURCE: Moscow. Universitet. Vestnik. Seriya 3. Fizika, astronomiya, no. 3, 1965, 81-82

TOPIC TAGS: gas discharge, plasma, helium, argon, neon, noise analysis/ IP 12M noise analyzer, S4 8 spectrum analyzer

ABSTRACT: Plasma noise and oscillations were studied experimentally in a low pressure discharge tube filled with helium, neon, and nitrogen. The tubes were 0.5 and 3 cm in diameter and had oxide cathodes. The noise spectra were studied by means of an IP-12M noise analyzer and an S4-8 panoramic spectrum analyzer. Frequency versus current curves showed almost constant values for all three gases; these were 0.4 Mcycles for He, 0.2 Mcycles for Ne, and 0.1 Mcycles for argon. It is theoretically shown that in a nonisothermal plasma ion-sound waves can exist with wavelengths much larger than the Debye length. Using the above frequency

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L 59510-65

ACCESSION NR: AP5016629

2

data, these wavelengths were determined from the expression

$$v = \lambda f = \gamma \left(\frac{KT_e}{m_i}\right)^{1/2}.$$

"The authors express their gratitude to A. A. Zaytzev for evaluating the work."
Orig. art. has: 1 figure, 1 formula, and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet, Kafedra elektroniki (Moscow State University, Department of Electronics)

SUBMITTED: 27Jun64 ENCL: 00 SUB CODE: GP

NO REF SOV: 002 OTHER: 002

Card 2/2

L 55035-65 EWT(1)/EPF(n)-2/EWG(m)/EPA(w)-2 Pz-6/Po-4/Pab-10/Pi-4 IJP(c)
ACCESSION NR: AP5013349 WW/AT UR/0109/65/010/005/0951/0952
533.9.01:621.385.1.01

57
B

AUTHOR: Zaytsev, A. A.; Shvilkin, B. N.

TITLE: Hysteresis in the phenomenon of helical instability of the positive column in a magnetic field

SOURCE: Radiotekhnika i elektronika, v. 10, no. 5, 1965, 951-952

TOPIC TAGS: positive column, positive column stability, plasma

ABSTRACT: The results of an experimental investigation of the positive column in the sealed discharge tubes are reported; tube radii, 1.25, 1.4, and 1.5 cm; electrode spacing, 80 cm; He and He+Ne fill at 0.2--0.5 torr; magnetic field, up to 2500 gs. Oscillations at a fundamental frequency of 27.4 kc (and its harmonics) were detected during the helical instability of the column. The values of the critical magnetic field corresponding to the appearance and disappearance of the helix, with discharge currents within 25--400 ma, are tabulated. Also the effect of the magnetic field on the frequency of rotation of the helix was measured. Orig. art. has: 1 figure and 1 table.

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L 55035-65
ACCESSION NR: AP5013349

ASSOCIATION: none

SUBMITTED: 24Jun64 ENCL: 00 SUB CODE: ME, EM

NO REF SOV: 001 OTHER: 001

Card 2/2

ACCESSION NR: AP4014226 S/0023/63/000/004/0414/0419

AUTHORS: Kaar, H. (Kaar, Kh.); Kirret, O. (Corresponding member); Schwindlerman, G. (Shvindlerman, G.)

TITLE: A study of the activity of catalytic systems based on bis-cyclopentadienyl titanium compound in the polymerization of ethylene. 2. A study of the activity of the catalytic complex $(C_5H_5)_2TiCl_2$- $(iso\text{-}C_4H_9)_2AlCl$

SOURCE: AN EstSSR. Izv. Ser. fiz.-matem. i tekhn. nauk, no. 4, 1963, 414-419

TOPIC TAGS: polymerization, ethylene polymerization, catalyst, alicyclic compounds, titanium-aluminum catalyst, bis-cyclopentadienyl titanium compound, di-iso-butyl aluminum chloride, hydrochloric acid, alkylaluminum dichloride, polar titanium-aluminum bond

ABSTRACT: The effect of HCl and alkylaluminum chlorides on the performance of the catalytic complex $(C_5H_5)_2TiCl_2$ - $(iso\text{-}C_4H_9)_2AlCl$ in the polymerization of ethylene was investigated. The activity of the catalytic system was plotted on graphs and recorded as the yield of the polymer per 1 Mol of bis-cyclopentadienyl (BCPD) within a time period of 1.5 hours. Preliminary experiments with the polymerization

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ACCESSION NR: AP4014226

of ethylene in toluene by the Ti-Al complex revealed a maximum activity within a 20-40C temperature range. It was found that when either HCl or $RAlCl_2$ were introduced into the reactor previous to the formation of the catalytic Ti-Al complex, the polymerization of ethylene did not take place at all, while the green inactive Ti-Al compound was still formed. Since HCl and $RAlCl_2$ were effective when time was allowed for the formation of an active Ti-Al complex, it is interpreted by the authors as an indication of a certain time element required for the formation of C-Ti bonds. It is assumed that the incorporation of 0.5-1.0 millimole of HCl per 1 millimole of R_2AlCl results primarily in the formation of $RAlCl_2$. The obtained polymers were of linear structure and had a melting point of 133-137C. Infrared spectral analysis revealed that when the catalytic system was stimulated by the addition of $(C_6H_5)_3CCl$ the obtained polyethylene contained a large amount of side branches and of double bonds. Orig. art. has: 3 tables and 4 charts.

ASSOCIATION: Institut khimii Akademii nauk Estonskoy SSR (Institute of Chemistry, Academy of Sciences Estonian SSR)

SUBMITTED: 20Jun63 DATE ACQ: 07Feb64 ENCL: 00

SUB CODE: CH NO REF SOV: 004 OTHER: 006

Card 2/2

KAAR, Kh. [Kaar, H.]; KIRRET, O.; SHVINDLERMAN, G.

Studying the activity of catalysts on the basis of bis-cyclopentadiene compounds of titanium in the polymerization of ethylene. Izv. AN Est. SSR. Ser. fiz.-mat. i tekh. nauk 12 no. 3:295-300 '63. (MIRA 16:11)

1. Academy of Sciences of the Estonian S.S.R., Institute of Chemistry. 2. Corresponding member of the Academy of Sciences of the Estonian S.S. R. (for Kirret).

ACCESSION NR: AP4043032 S/0023/64/000/002/0148/0153

AUTHORS: Kaar, Kh. (Kaar, H.); Shvindlerman, G. (Schwindlerman, G.)

TITLE: On the interaction of tri-isobutyl of aluminum with alkyl chlorides

SOURCE: AN EstSSR. Izv. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 2, 1964, 148-153

TOPIC TAGS: aluminum organic compound, alkylation, reaction rate, halide, aromatic hydrocarbon

ABSTRACT: As a sequel to the work of A. G. Pozamantir (Vy*sokomolekulyarny*ye soyedineniya, v. 2, 1026, 1960) and Pozamantir and M. P. Genusov (ZhOKh, No. 4, 32, 1175, 1962) on the sequence of the rate of interaction of alkyl halides in R_3Al, the authors show that the interaction between R_3Al, R_2AlCl or RA_1Cl_2 and alkyl halides,

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ACCESSION NR: AP4043032

being by its nature a nucleophilic substitution at the aluminum atom, is accelerated, on the one hand, when the electrophility of the organoaluminum molecule increases, and on the other hand when the possibility of a C-Cl bond interruption in the RCl increases. The RCl reactivity order is

$$C_2H_5Cl < n\text{-}C_4H_9Cl < iso\text{-}C_5H_{11}Cl < C_7H_{15}Cl < C_9H_{19}Cl <$$
$$< tert\text{-}\ C_4H_9Cl < CH_2{=}CH{-}CH_2Cl < C_6H_5CH_2Cl < (C_6H_5)_3CCl.$$

If the reaction mixture contains aromatic hydrocarbons or groups, the appearance of $RAlCl_2$ and $AlCl_3$ gives rise to Friedel-Craffts reactions followed by an evolution of free HCl. Such a reaction does not occur, however, with the tertiary alkyl halides of the R_3CCl type, probably because of steric hindrance. A reaction mechanism involving various alkyl halides reacting with aluminum tri-isobutyl is suggested. The experimental procedure and the reagents employed

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ACCESSION NR: AP4043032

are described, and the interaction with $(iso\text{-}C_4H_9)_3Al$ with the six compounds is described and the reaction products are tabulated. Orig. art. has: 3 formulas and 1 table.

ASSOCIATION: Institut khimii Akademii nauk Estonskoy SSR (Institute of Chemistry, Academy of Sciences Estonian SSR)

SUBMITTED: 23Nov63 ENCL: 00

SUB CODE: OC NR REF SOV: 002 OTHER: 002

Card 3/3

ACCESSION NR: AP4043033 S/0023/64/000/002/0154/0159

AUTHORS: Kaar, Kh. (Kaar, H.); Shvindlerman, G. (Schwindlerman, G.)

TITLE: Effect of addition of alcohols on the catalytic activity of the systems $(C_5H_5)_2TiCl_2 + R_3Al$ (or R_2AlCl) in polymerization of ethylene

SOURCE: AN EstSSR. Izv. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 2, 1964, 154-159

TOPIC TAGS: alcohol radical, catalytic activity, ethylene, titanium compound, catalytic polymerization

ABSTRACT: This study was of interest because alcohols, on the one hand, are capable of dissociation with separation of a proton ($ROH \rightleftarrows RO^- + H^+$), and on the other hand the anion OR^- is capable of replacing Cl in $(C_5H_5)_2TiCl_2$ with formation of a new titanium compound $(C_5H_5)_2Ti(OC_2H_5)Cl$, containing oxygen. It is shown that the activity

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ACCESSION NR: AP4043033

of the bicomponent catalytic system $(C_5H_5)_2TiCl_2$ -- $(iso\text{-}C_4H_9)_2AlCl$ in the polymerization of ethylene increases if a third component selected from the group of alcohols is added to the system after the formation of the catalytic complex. Unlike in the previously observed action of small amounts of HCl or RCl, which interact with the anionic part of the catalytic complex, the influence of the alcohols is also connected with the direct addition of an OR group to titanium. This leads to an increase in the stability of the catalytic complex. The reagents ($Al(iso\text{-}C_4H_9)_3$, $(iso\text{-}C_4H_9)_2AlCl$, and $(C_5H_5)_2TiCl_2$), and also the polymerization of the ethylene, were carried out in accordance with a procedure described previously by the authors (Izv. AN ESSR, Ser. fiz.-matem. i tekhn. nauk, no. 3, 295 and 414, 1963). The experimental procedure is briefly described. Orig. art. has: 1 figure and 4 tables.

Card 2/3

ACCESSION NR: AP4043033

ASSOCIATION: Institut khimii Akademii nauk Estonskoy SSR (Institute of Chemistry, Academy of Sciences, Estonian SSR)

SUBMITTED: 09Jan64 ENCL: 00

SUB CODE: OC NR REF SOV: 003 OTHER: 003

Card 3/3

L 2926-66 EWT(m)/EPF(c)/EWP(j)/T/EWP(t)/EWP(b) IJP(c)/RPL JD/WW/RM

ACCESSION NR: AP5022608 UR/0190/65/007/009/1604/1608
66.095.264

AUTHORS: Korneyev, N. N.; Shvindlerman, G. S.; Red'kina, L. I.

TITLE: The synthesis and catalytic activity of isopropenphenylaluminum

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 9, 1965, 1604-1608

TOPIC TAGS: catalyst, catalysis, aluminum compound, aluminum organic compound, Ziegler catalyst

ABSTRACT: The synthesis of isopropenphenylaluminum by the reaction of aluminum, hydrogen, and isoprene and its use as a component in a Ziegler type catalyst in the polymerization of ethylene have been investigated. The aim of the investigation was to test whether the introduction of a double bond into the alkyl radical stabilizes the alkyl-aluminum compound towards oxidation and also to study the catalytic properties of the synthesized compound when used as a component in a Ziegler type catalyst. The experimental results are shown graphically in Fig. 1 on the Enclosure. It is concluded that the introduction of the double bond into alkyl radical stabilizes the Al-C bond towards attack by water and oxygen and that the catalytic effectiveness of isopropenphenyl-aluminum is similar in magnitude to that of triethylaluminum. The authors thank B. A. Krentsel' for his help and valuable

Card 1/3

L 2926-66

ACCESSION NR: AP5022608

advice. Orig. art. has: 1 table and 1 graph.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute for Petrochemical Synthesis, Academy of Science, SSSR)

SUBMITTED: 21Oct64 ENCL: 01 SUB CODE: GC, OC

NO REF SOV: 004 OTHER: 003

Card 2/3

L 2926-66

ACCESSION NR: AP5022608

ENCLOSURE: 01

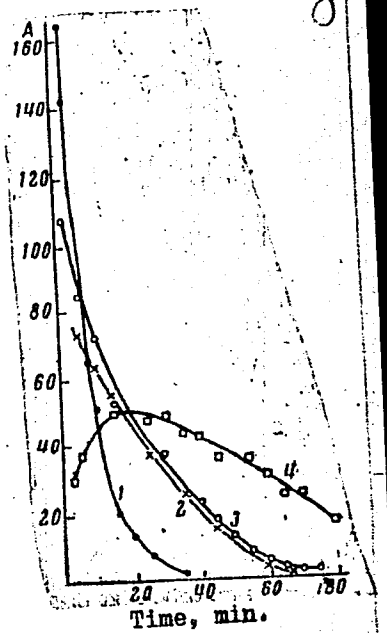


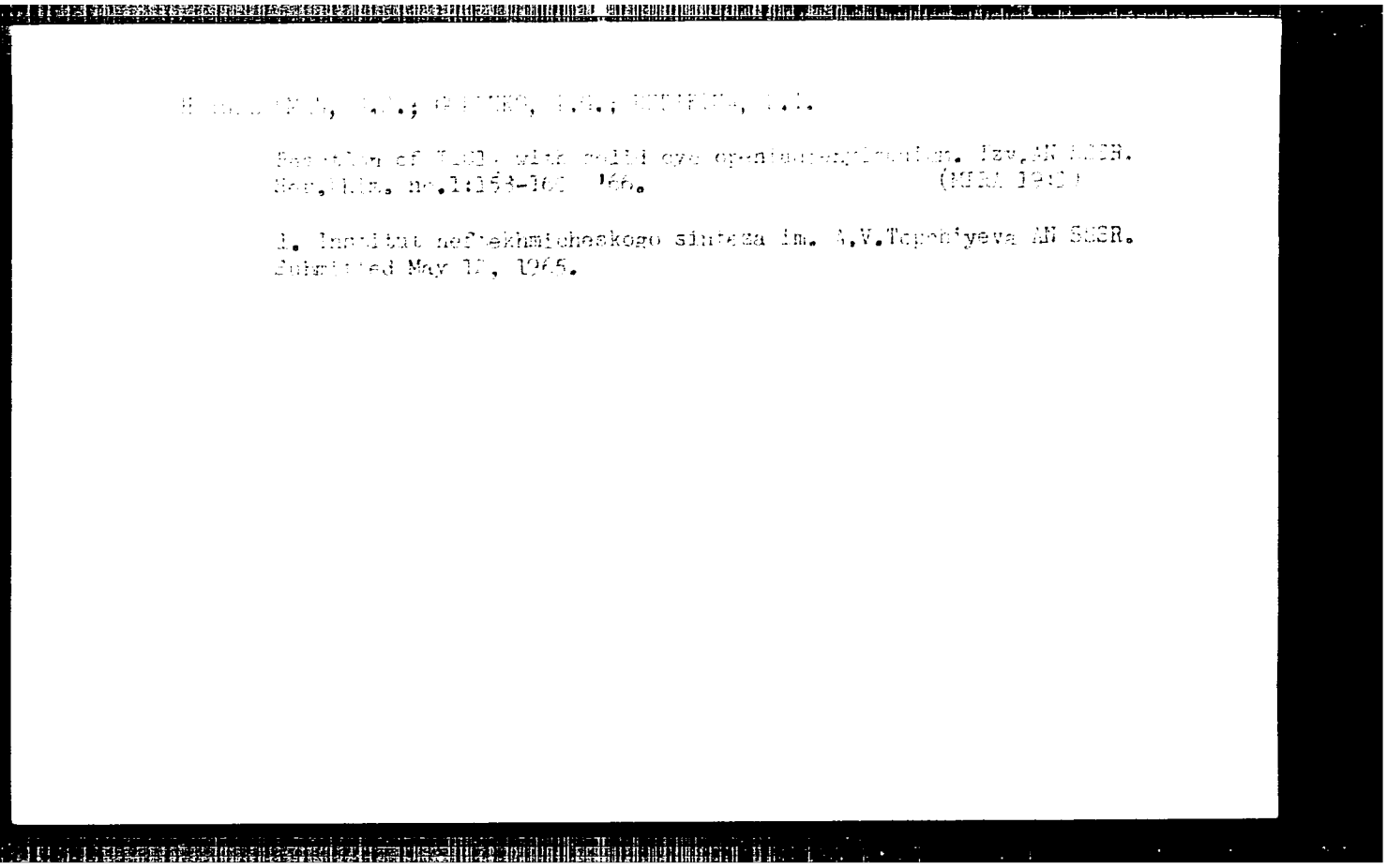
Fig. 1. Relative catalytic activity of Ziegler catalyst in the polymerization of ethylene (40C, medium n-heptane, [Metal Cl_4-] = 4 m mole/liter, mole ration AlR_3: Metal Cl_4 = 1:2). 1 - $Al(C_5H_9)_3$: VCl_4 catalyst formed in presence of monomer; 2 - $Al(C_2H_5)_3$: $TiCl_4$ catalyst kept for 30 min at 20C prior to reaction; 3 - $Al(C_5H_9)_3$: $TiCl_4$ catalyst formed in presence of monomer. A - polymer yield g/hour per 1 m mole $Al(C_5H_9)_3$.

Card 3/3

[redacted], G.I.; [redacted], T.A.

Determination of lower aluminum alkyls by the hydrolysis method.
Zav. lab. 21 no.1:33-34 '55. (MLRA 12:3)

1. Institut neftekhimicheskogo sinteza AN SSSR.



ACC NR: AP6029064 SOURCE CODE: UR/0413/66/000/014/0121/0121

INVENTOR: Baskakov, Yu. A.; Svirskaya, P. I.; Shvindlerman, G. S.; Stonov, L. D.; Bakumenko, L. A.; Kol'tsova, S. S.

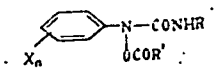
ORG: none

TITLE: A weed control method. Class 45, No. 184062. [announced by All-Union Scientific Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 121

TOPIC TAGS: weed KILLER, AMINE, alkylcarbamidoarylhydroxyamine

ABSTRACT: To increase weed control selective action of herbicides, it is proposed to use N-alkylcarbamido-N-arylhydroxylamines of the general formula:



where R and R' are the C_1—C_5 alkyls; X is Cl, CH_3, H; and n is 1 or 2. [WA-50; CBE No. 11]

SUB CODE: 07/ SUBM DATE: 26Jun65/

Card 1/1 UDC: 632.954.2

ACC NR: AP6030548 SOURCE CODE: UR/0413/66/000/016/0029/0029

INVENTOR: Baskakov, Yu. A.; Svirskaya, P. I.; Mel'nikov, N. N.; Shvindlerman, G. S.; Vsevolozhskaya, N. B.; Stonov, L. D.; Bakumenko, L. A.

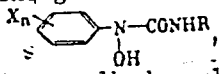
ORG: none

TITLE: Preparation of N-hydroxyurea derivatives. Class 12, No. 184835 [announced by All-Union Scientific Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 29

TOPIC TAGS: herbicide, hydroxyurea derivative, alkyl isocyanate, alkylcarbamoyl chloride, WEED KILLER, UREA COMPOUND

ABSTRACT: In the proposed method for the preparation of herbicides, derivatives of N-hydroxyurea of the general formula:



are obtained by treating arylhydroxylamines with alkyl isocyanates or with alkylcarbamyl chlorides. [WA-50; CBE No. 11]

SUB CODE: 07/ SUBM DATE: 28Jul64/

UDC: 547.495.2.07
632.954.2

Card 1/1

ACC NR: AR7000850 SOURCE CODE: UR/0058/66/000/009/E006/E006

AUTHOR: Shvindlerman, L. S.

TITLE: Criteria of wettability

SOURCE: Ref. zh. Fizika, Abs. 9E47

REF SOURCE: Sb. Poverkhnostn. yavleniya v rasplavakh i voznikayushchikh iz nikh tverd. fazakh. Nal'chik, 1965, 40-45

TOPIC TAGS: free energy, entropy, enthalpy, wettability

ABSTRACT: The application of the Chatelier (Le)-Braun principle to surface systems is analyzed. It is shown that in addition to the correlation between the specific free energies of interphase boundaries, the criteria of wettability are also the correlations between the specific entropies, energies, and enthalpies of interphase boundaries. [Translation of abstract] [NT]

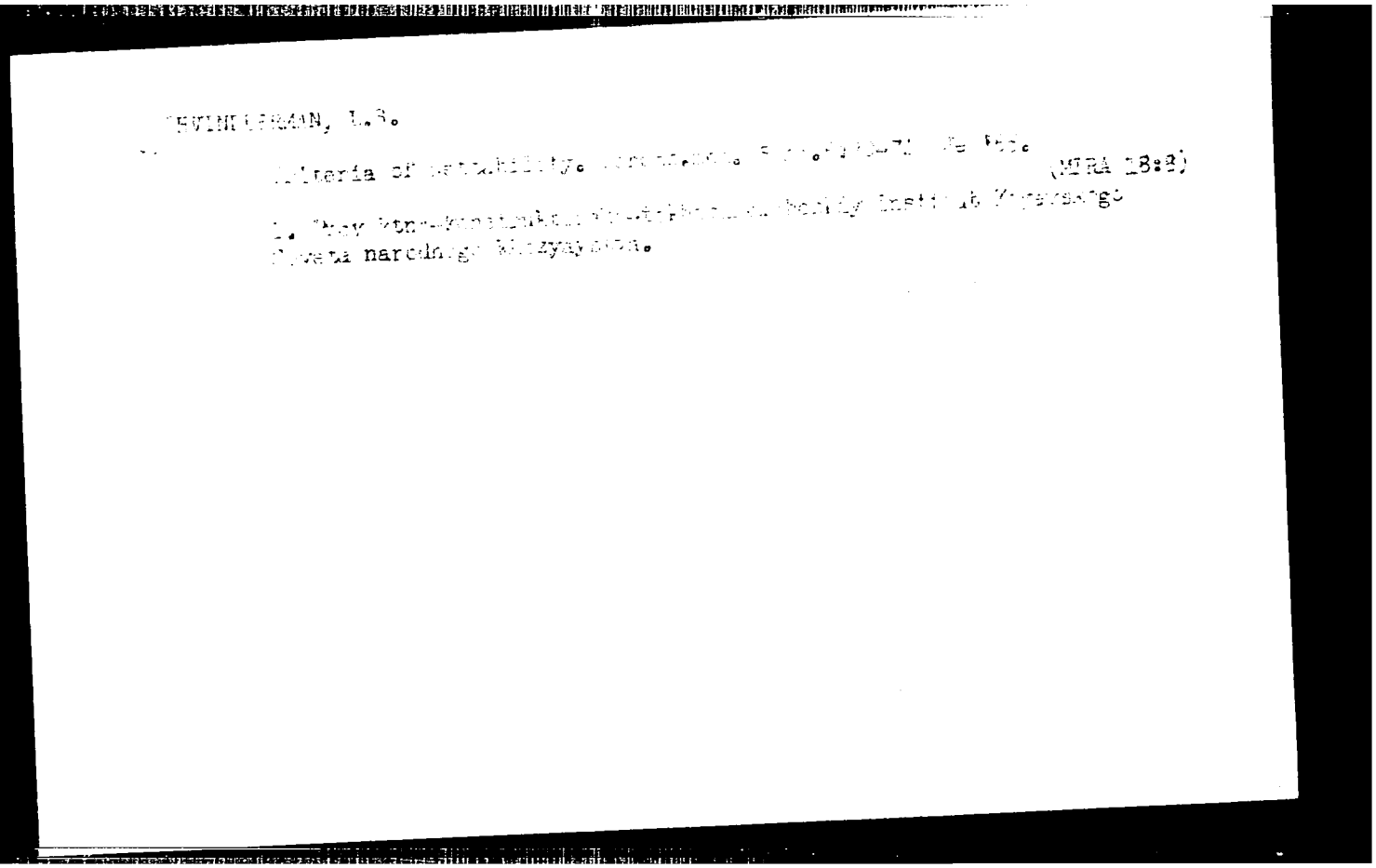
SUB CODE: 20/

Card 1/1

SHVINDLERMAN, L.S.

Heating of "slender" bodies in liquid media. Inzh.-fiz. zhur. 8 no.1:53-57 Ja '65. (MIRA 18:3)

1. Proyektno-konstruktorsko-tekhnologicheskiy institut Soveta narodnogo khozyaystva UkrSSR, Kiyev.



L 9681-66 EWT(m)/EWP(t)/EWP(b) JD/WB

ACC NR: AP5027597 SUB CODE: UR/0135/65/000/011/0008/0009

AUTHOR: Asnis, Ye. A. (Engineer); Prokhorenko, V. M. (Engineer); Shvindlerman, L. S. (Engineer)

ORG: [Asnis, Prokhorenko] Kiev Bol'shevik Plant (Kiyevskiy zavod "Bol'shevik"); [Shvindlerman] PKTI, Kiev

TITLE: Mechanism of crack formation during the welding and buildup of copper onto steel

SOURCE: Svarochnoye proizvodstvo, no. 11, 1965, 8-9

TOPIC TAGS: molten copper, steel, crack propagation, austenitic steel, ferritic steel, heat stress / 0Kh17T monophase ferrite steel

ABSTRACT: The interaction of molten copper with steel, particularly during buildup and welding, results in the formation of copper-filled cracks. This is due to the cleavage effect of molten copper as well as to the special energy state of the melt at the grain boundaries and the consequent, enhanced diffusion of liquid-phase atoms through the crystal lattice of solid metal. A recent study (Asnis, Ye. A., Zamkov, V. N. Svarochnoye proizvodstvo, 1961, no. 7) revealed that the presence of a ferrite phase in steel reduces, or -- if the ferrite content exceeds 30% -- eliminates the penetration of steel by copper in such cases. Accordingly, the authors present some

UDC: 621.791.92.011:669.35:669.15-194

Card 1/3

ACC NR: AP5027597 2

conclusions based on an experimental investigation of the mechanism of action of ferrite on crack formation, as well as of the general causes of crack formation, following the examination of microsections taken from welded specimens. It was found that the buildup of copper onto ØKh17T monophase ferrite steel did not result in any cracks whatsoever. Hence the hypothesis is offered that the cracks forming during the buildup of copper onto steel are produced by the combined action of the penetration of molten copper into the microfissures arising during the crystallization of the matrix phase -- steel (the Rebinder effect) [2]- and the attendant thermal tensile stresses. The Rebinder effect (cf. P. A. Rebinder. Fiziko-khimicheskiye issledovaniya protsessov deformatsii tverdykh tel. Yubileynyy sbornik, posvyashchennyy 30-letiyu Velikoy Oktyabr'skoy sotsialisticheskoy revolyutsii. Izd. AN SSSR, 1947) is contingent on the penetration of molten copper into the capillary microfissures and hence also on the wetting of the capillary walls. Of the two phases present in steels, the γ-phase (austenite) is wetted by molten copper, but the α-phase (ferrite) is not. Hence, it may be assumed that the failure of cracks to propagate through the ferrite phase is due to the nonwettability of this phase with respect to copper. Further, to assess the effect of the thermal stress factor on crack formation, copper was welded onto 10 mm specimens of St.3 steel preheated to 900-950°C (above the temperature of austenite formation). In this case, the preheating reduced to a minimum the thermal tensile stresses and the formation of austenite provided favorable conditions for the penetration of copper into the microfissures. Yet no cracks were detected following the buildup. This as well as other, similar experiments which produced the same results,

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001550420001-3"

L 9681-66

ACC NR: AP5027597

indicates that the Rebinder effect alone is not enough to cause crack formation; the presence of thermal tensile stresses is also a prerequisite. Further, it was established that the cleavage effect of molten copper on steel, as calculated in terms of capillary pressure, is ~2.5 kg/mm^2. Orig. art. has: 4 figures, 1 formula.

SUB CODE: 11,13/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 001

Card 3/3

SHVINDT, L.

Work cycle schedule in our mining area. Mast.ugl. 5 no.6:19-20 Je '56. (MLRA 9:8)

1. Nachal'nik uchastka shakhty No. 8 "Lipkovskaya" kombinata Tulaugol'.
(Moscow Basin--Coal mines and mining)

LEVIN, Ya.A.; SHVINK, N.A.; KUKHTIN, V.A.

Condensed heterocycles. Report No.9: Condensation products of ethoxymethylenemalonic ester with 2-amonothiadiazoles and 2-aminothiazoles. Izv. AN SSSR. Ser. khim. no.8:1481-1484 Ag '64. (MIRA 17:9)

1. Institut organicheskoy khimii AN SSSR, Kazan'.

SHVINKA, N.E.

Effect of natural sleep on the final stage of dark adaptation. (MIRA 16:2)
Vest.LGU 18 no.3:127-132 '63.
(SLEEP) (NIGHT VISION)

L 08408-67

ACC NR: AR6031311 SOURCE CODE: UR/0299/66/000/006/R034/R034

AUTHOR: Shvinka, N. E.

24
B

TITLE: Biophysics of the effect of ultraviolet radiation 22 per neuromotor unit

SOURCE: Ref. zh. Biologiya, Part I, Abs. 6R221

REF SOURCE: Sb. Biofizika kletki. M., Nauka, 1965, 228-238

TOPIC TAGS: radiation, ultraviolet radiation, neuromotor unit, frog muscle, motor dendrite/n. tibialis dendrite

ABSTRACT: A section of a motor dendrite, the n. tibialis, innervating the frog's gastrocnemius muscle, was subjected to radiation in the 250—280 mμ region of UV. The UV had various effects on the specimen depending on its original functional conditions: at a low initial level of excitability (a threshold above 2.7 v) it did not cause any changes, at a high level (threshold 0.06 v), the excitability decreased. At a middle level of excitability (threshold about 0.15 v), a two-phase threshold change was observed: at first, it decreased by almost 50%, and then increased approximately 8-fold. An increase in the area of the irradiated section of the nerve brought about a sharp shift in excitability. Intensity-vs. time

Card 1/2 UDC: 577.3

Card 2/2 ls

ACC NR: AP7002425 SOURCE CODE: UR/0051/66/021/006/0761/0762

AUTHOR: Rozanov, A. G.; Cheburkin, N. V.; Shvindt, N. N.

ORG: none

TITLE: Measurement of the electron concentration in a pulsed xenon discharge with the aid of a gas laser

SOURCE: Optika i spektroskopiya, v. 21, no. 6, 1966, 761-762

TOPIC TAGS: laser application, gas laser, gas discharge, xenon, discharge plasma, plasma density, helium, neon, laser

ABSTRACT: The authors constructed for the measurements the laser interferometer first proposed by H. Kogelnik and D. Ratel (Proc. IRE v. 50, 2365, 1962). The operation and theory of the interferometer are briefly reviewed. An He-Ne laser operating simultaneously at 0.63 and 3.39 μ was used in conjunction with an experimental plane flash lamp filled with xenon at 400 mm Hg. The per unit energy in the lamp was 90 Joules/cm^3 and the interferometer sensitivity was 8.3×10^{15} cm^{-3} per modulation peak. The results of measurement of the plasma density at different points of the discharge indicate that the discharge channel is completely filled. This was confirmed by direct photography of the discharge. The laser beam modulation of the plasma (number of modulation peaks) was constant from flash to flash. The time variation of the plasma density is similar to the variation of the discharge current. The maximum density, corresponding to maximum current, is 7×10^{17} cm^{-3}. The corresponding temperature at the maximum (calculated using the Saha formula) is 9500K, and the degree of ionization is 5.4%. Orig. art.

UDC: 537.523/.527

Card 1/2

ACC NR: AP7002425

has 3 figures and 4 formulas.

SUB CODE: 20/ SUBM DATE: 04Sep65/ OTH REF: 003/ ATD PRESS: 5113

Card 2/2

S/196/63/000/001/034/035
E194/E155

AUTHORS: Krotov, P.V., Boldov, M.Ye., and Shvionov, I.V.

TITLE: An investigation of silicon rectifiers

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.1, 1963, 11-12, abstract 1 L46. (Tr. Tsentr. n.-i. in-ta mekhaniz. i energ. lesn. prom-sti, v.34, 1962, 53-69)

TEXT: In addition to their known advantages, silicon rectifiers have good resistance to shock and vibration so that they are particularly suitable for narrow-gauge rectifier locomotives for timber haulage. In 1960 TsNIIME developed and made a narrow-gauge electric locomotive type ЭКОУ -4-01 (EKou-4-01) having silicon rectifiers and meeting the requirements stipulated for the timber and peat industries. The locomotive power is 150 kW, the coupled weight 18 tons. In developing the locomotive the silicon rectifiers were tested and recommendations were made to the factory manufacturing the rectifiers. The following conclusions are drawn from tests on silicon rectifiers type ПВК-100 (PVK-100):

Card 1/2

L 25844-66

ACC NR: AR5018683 SOURCE CODE: UR/0196/65/000/007/S010/S010

AUTHOR: Kashechkin, N. I.; Moreyev, A.K.; Perel'mutor, M. M.; Uvarov, M. V.; Shvionov, I. V.

ORG: none

TITLE: Portable power station "Druzhba" for lighting purposes

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 7S55

REF— SOURCE: Lesoekspluat. i lesn. kh-vo. Ref. inform., no. 5, 1965, 8-9

TOPIC TAGS: power generating station, [redacted], lighting equipment, electric motor

TRANSLATION: This power station is to supply light and heat up to 1.5 kw and can be used on construction sites, wood clearings, timber conveying points, etc. For primary motive power, a one-cylinder, two-cycle motor is used (from a gasoline-motor saw). Through the reducer, the motor is connected with a generator of 1.7 kw, 220 v and 200 cps (shortcircuited and asynchronous). For excitation, a battery of condensers of 24 microfarades is switched in. A diagram of the portable power station and directives for its operation are given. B. Shifrinson.

SUB CODE: 09/ SUBM DATE: none

UDC: 621.311.23:634.0

Card 1/1